Criminal Investigation System

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Abstract:

The Criminal Investigation System with represents a significant advancement in the field of law enforcement technology. By leveraging the power of data and predictive analytics, it empowers investigators to solve cases faster, identify suspects more accurately, and ultimately, enhance public safe. Based on the historical crime data suggest that Hashing algorithm. The digital system functions by gathering and classifying different kinds of information, such as crime scene reports, witness statements, forensic evidence, and suspect profiles. It facilitates the work of an officer by allowing him to compile new, vital case details on demand and to monitor the case's progress online.

Keywords: Criminal Investigation, System Law, enforcement technology ,Data Predictive, analytics, Solve cases, faster, Identify suspects public safety, Historical crime , data Hashing algorithm , Gathering information Classifying , information Crime ,scene reports, Witness statements ,Forensic evidence ,Suspect profiles , Officer.

Introduction:

These days, crime rates are rising daily, with robberies and serial killings becoming more common. The project named "CRIMINAL INVESTIGATION SYSTEM" sought to identify criminals who could provide information to the investigating department about similar cases or crimes with similar methods of operation. Based on their past behaviour, the system assists in identifying the culprits or suspects who may be able to lead an investigation. The crime and investigation records of culprits and suspects are maintained here with limited details, with the majority of the data.Law enforcement organizations utilize a comprehensive structure called a criminal investigative system to solve crimes. It includes a range of procedures, tools, and techniques designed to get information, identify potential suspects, and apprehend offenders. In addition to this we also implement a hashing algorithm which will helps in encrypting the data because of it's confidentiality The system will have an administrative wing which will be handled by the bureaus like Crime Branch, CBI, etc. Here, in the initial stage, the admin adds the officer to the system and then adds them to a particular case that they are going to investigate individually.

Literature Survey:

1. Dongyuan Li and Xiaojun Bai, "Deep Learning-Based Image Retrieval for Criminal Investigations," International Conference on Computer Network, Electronic and Automation (ICCNEA), 2020 The low-level feature-based CSI image retrieval method presented in this paper extracts low-level images using a content-based image retrieval (CBIR) framework elements of the picture or to combine various low-level information, proving that CBIR technology is feasible for use in CSI.

2. The paper "Comparison of Local Binary Pattern and Eigenfaces for Predict Suspect Positive Drugs" was presented at the 2020 2nd International Conference on Broadband Communications, Wireless Sensors and Powering (BCWSP) by Bagus Priambodo, Yuwan Jumaryadi, and Zico Pratama Putra. To generate the dataset, 30 images of people before and after drug use were collected and pre-processed.

3. IEEE Student Member Neil Veira, IEEE Member Zissis Poulos, and IEEE Senior Member Andreas Veneris "A Probabilistic Suspect Implication Approach for Bug Searching" IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (Volume 39, Issue 12, Dec. 2020).

4. Users With Both Warm And Cold Starts "A Comprehensive Recommender System Model," Anupriya Gogna and Anshul Majumdar, 2019 International Conference on Innovative Trends in Computer Engineering (ITCE'2019).In order to improve prediction accuracy, we employ secondary data in this paper related to user demographics and item categories.

5. Aiming at suspects prediction of terrorist attacks, five machine learning-based methods are used to quantitatively sort the recorded data of terrorist attacks in this paper. Neil Veira, Student Member, IEEE; Zissis Poulos, Member, IEEE; and Andreas Veneris, Senior Member, IEEE.

6. Conference on Big Data and Information Analytics (BigDIA)."Suspect Set Prediction in RTL Bug Hunting," by Neil Veira, Zissis Poulos, and Andreas Veneris, 2018 Design, Automation & Test in Europe Conference & Exhibition (DATE).This work presents a method that uses past debugging data to understand dependencies between design components, which are then represented by a probabilistic graph

7. "Gait Verification System for Supporting Criminal Investigation" by Daigo Muramatsu, Yasushi Makihara, Haruyuki Iwama, Takuya Tanoue, and Yasushi Yagi Information Processing Society of Japan, October 18, 2013.

8. "On the use of redundancy to reduce prediction error in alternate analog/RF test," Haithem Ayari, Florence Azais, Serge Bernard, Mariane Compte, Vincent Kerzerho, Olivier Potin, and Michel Renovell, IEEE 18th International Mixed-Signal, Sensors, and Systems Test Workshop, 2012.

EXISTING SYSTEM:

The criminal investigation system that is currently in place primarily uses manual data collection, analysis, and investigation techniques. These traditional methods of investigation take a lot of time and resources to gather and analyze manually. It can be labor-intensive and time-consuming for investigators to sort through large volumes of data. The system is slow and complicated. This process is labor-intensive and prone to errors. There is also no data security.

PROPOSED SYSTEM:

We proposes a criminal investigation system that uses logs to investigate the status of criminal cases and also identifies primary suspects. Data is encrypted using a hashing algorithm to ensure privacy and security, allowing us to identify the culprit quickly and prevent him from having time to flee. The system is intended to assist agencies such as the CBI, CID, and other similar bureaus in expediting their investigation process and monitoring the status of multiple cases at once.

Authorized officers will be able to access the system online, check the case status, and update any pertinent information as needed.The algorithm looks up historical criminal records of people involved in similar acts and suggests suspects logically based on the type of case, modus operandi, possessions, accessories, and other entities involved

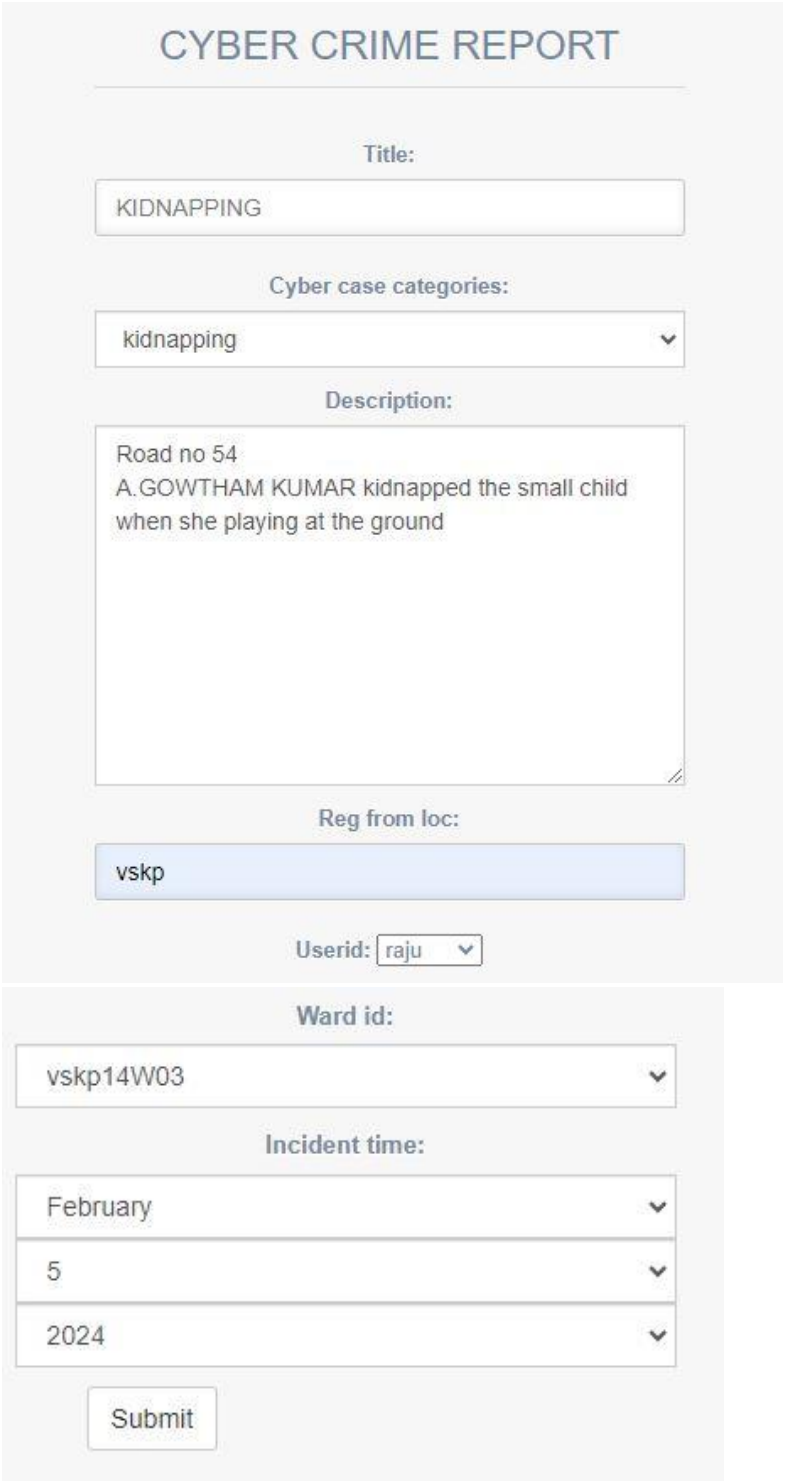
Results:

Home Page:

Here it is a homepage for officer login,

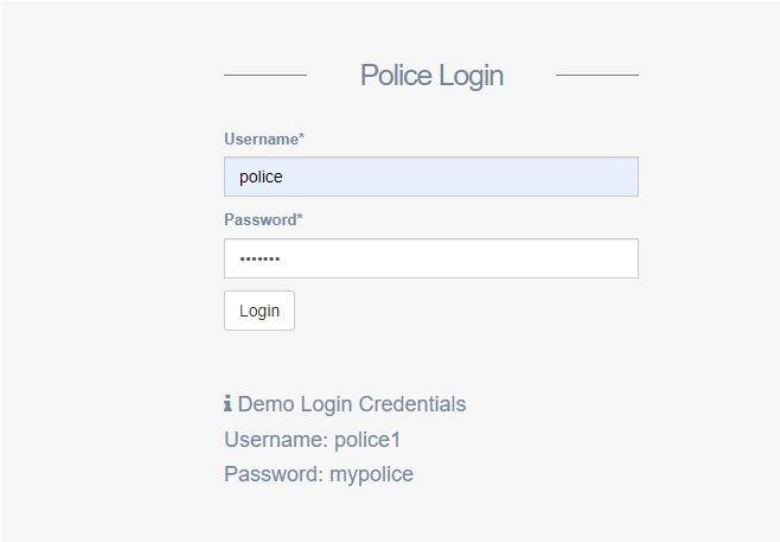
REPORT CRIME:

Here the officer can take the compliant of the people,



Police Login:

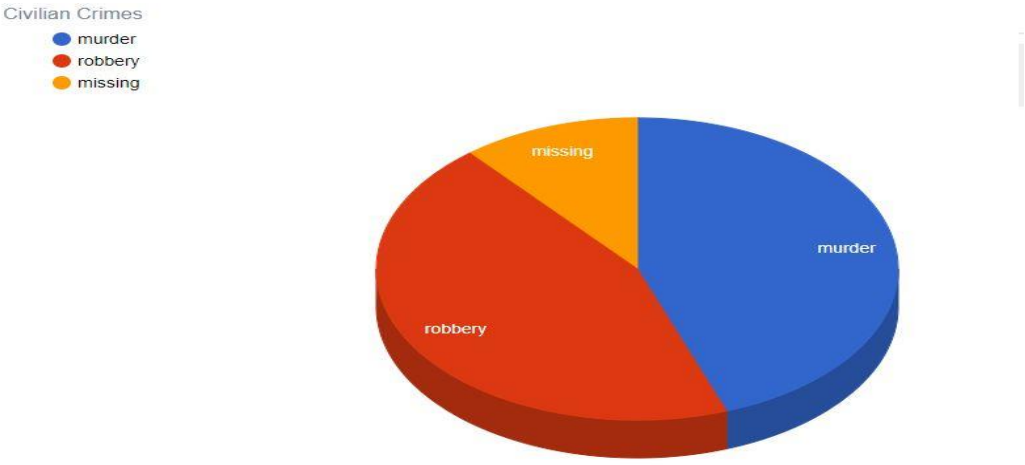
Here Police will be login and check the case files, details.



Case List:

Civilian Crime

It will show the total cases in pie chart,



Cyber Crime

Result:

And finally result in the police portal,

Conclusion:

The criminal investigation system is an online tool used mostly to teach staff members who create tailored solutions to satisfy organizational requirements. This application software has undergone successful computation and testing using "test cases." It is easy to use and contains the necessary options that the officers can use to carry out the intended tasks. It helps law enforcement personnel. The system for criminal investigations improves the accurate and effective handling of criminal records. It offers great security and simple maintenance. Records store additional information and are readily accessible.

References:

[1]. Dongyuan Li and Xiaojun Bai, "Deep Learning-Based Image Retrieval for Criminal Investigations," 2020 International Conference on Computer Network, Electronic and Automation (ICCNEA).

[2]. Zico Pratama Putra, Bagus Priambodo, and Yuwan Jumaryadi "Equivalency of Local Binary Pattern and Eigenfaces to Estimate Positive Drug Suspects" is the topic of the 2nd International Conference on Broadband Communications, Wireless Sensors, and Powering (BCWSP) in 2020.

[3]. In the December 2020 issue of IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Neil Veira, Student Member, IEEE, Zissis Poulos, Member, and Andreas Veneris, Senior Member, discussed "Searching for Bugs using Probabilistic Suspect Implications."

[4]. Users With Both Warm And Cold Starts "A Comprehensive Recommender System Model," Anupriya Gogna and Angshul Majumdar, 2019 International Conference on Innovative Trends in Computer Engineering (ITCE'2019).

[5]. 2019 5th International Conference on Big Data and Information Analytics (BigDIA) "Suspects Prediction towards Terrorist Attacks Based on Machine Learning," Zissis Poulos, Member, IEEE, and Andreas Veneris, SeniorMember,IEEE.

[6]. "Suspect Set Prediction in RTL Bug Hunting" by Neil Veira, Zissis Poulos, and Andreas Veneris, 2018 Design, Automation & Test in Europe Conference & Exhibition (DATE).

[7]. Yasushi Makihara, Takuya Tanoue, Yasushi Yagi, Haruyuki Iwama, Daigo Muramatsu, "Gait Verification System for Supporting Criminal Investigation" Information Processing Society of Japan, October 18, 2013.

[8]. In "On the use of redundancy to reduce prediction error in alternate analog/RF test," Haithem Ayari, Florence Azais, Serge Bernard, Mariane Comte, Vincent Kerzerho, Olivier Potin, and Michel Renovell discuss this topic. 18th International Workshop on Mixed-Signal, Sensors, and Systems Testing, IEEE workshop 2012.